



ENTERED

OIPE

#2

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/081,816

DATE: 03/11/2002 1.5  
TIME: 10:41:10

Input Set : A:\EP.txt

Output Set: N:\CRF3\03112002\J081816.raw

3 <110> APPLICANT: Axel, Richard  
4 Scott, Kristin  
6 <120> TITLE OF INVENTION: Chemosensory Gene Family Encoding Gustatory And Olfactory Receptors And  
7 Uses Thereof  
9 <130> FILE REFERENCE: 0575/64019-A/JPW/ADM  
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/081,816  
C--> 11 <141> CURRENT FILING DATE: 2002-02-22  
11 <150> PRIOR APPLICATION NUMBER: 60/271,319  
12 <151> PRIOR FILING DATE: 2001-02-23  
14 <160> NUMBER OF SEQ ID NOS: 116  
16 <170> SOFTWARE: PatentIn version 3.1  
18 <210> SEQ ID NO: 1  
19 <211> LENGTH: 410  
20 <212> TYPE: PRT  
21 <213> ORGANISM: Drosophila melanogaster  
23 <400> 'SEQUENCE: 1  
25 Met Asp Thr Leu Arg Ala Leu Glu Pro Leu His Arg Ala Cys Gln Val  
26 1 5 10 15  
29 Cys Asn Leu Trp Pro Trp Arg Leu Ala Pro Pro Pro Asp Ser Glu Gly  
30 20 25 30  
33 Ile Leu Leu Arg Arg Ser Arg Trp Leu Glu Leu Tyr Gly Trp Thr Val  
34 35 40 45  
37 Leu Ile Ala Ala Thr Ser Phe Thr Val Tyr Gly Leu Phe Gln Glu Ser  
38 50 55 60  
41 Ser Val Glu Glu Lys Gln Asp Ser Glu Ser Thr Ile Ser Ser Ile Gly  
42 65 70 75 80  
45 His Thr Val Asp Phe Ile Gln Leu Val Gly Met Arg Val Ala His Leu  
46 85 90 95  
49 Ala Ala Leu Leu Glu Ala Leu Trp Gln Arg Gln Ala Gln Arg Gly Phe  
50 100 105 110  
53 Phe Ala Glu Leu Gly Glu Ile Asp Arg Leu Leu Ser Lys Ala Leu Arg  
54 115 120 125  
57 Val Asp Val Glu Ala Met Arg Ile Asn Met Arg Arg Gln Thr Ser Arg  
58 130 135 140  
61 Arg Ala Val Trp Ile Leu Trp Gly Tyr Ala Val Ser Gln Leu Leu Ile  
62 145 150 155 160  
65 Leu Gly Ala Lys Leu Leu Ser Arg Gly Asp Arg Phe Pro Ile Tyr Trp  
66 165 170 175  
69 Ile Ser Tyr Leu Leu Pro Leu Leu Val Cys Gly Leu Arg Tyr Phe Gln  
70 180 185 190  
73 Ile Phe Asn Ala Thr Gln Leu Val Arg Gln Arg Leu Asp Val Leu Leu  
74 195 200 205  
77 Val Ala Leu Gln Gln Leu Gln Leu His Gln Lys Gly Pro Ala Val Asp

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/081,816

DATE: 03/11/2002

TIME: 10:41:10

Input Set : A:\EP.txt

Output Set: N:\CRF3\03112002\J081816.raw

```

78      210      215      220
81 Thr Val Leu Glu Glu Gln Glu Asp Leu Glu Glu Ala Ala Met Asp Arg
82 225      230      235      240
85 Leu Ile Ala Val Arg Leu Val Tyr Gln Arg Val Trp Ala Leu Val Ala
86      245      250      255
89 Leu Leu Asn Arg Cys Tyr Gly Leu Ser Met Leu Met Gln Val Gly Asn
90      260      265      270
93 Asp Phe Leu Ala Ile Thr Ser Asn Cys Tyr Trp Met Phe Leu Asn Phe
94      275      280      285
97 Arg Gln Ser Ala Ala Ser Pro Phe Asp Ile Leu Gln Ile Val Ala Ser
98      290      295      300
101 Gly Val Trp Ser Ala Pro His Leu Gly Asn Val Leu Val Leu Ser Leu
102 305      310      315      320
105 Leu Cys Asp Arg Thr Ala Gln Cys Ala Ser Arg Leu Ala Leu Cys Leu
106      325      330      335
109 His Gln Val Ser Val Asp Leu Arg Asn Glu Ser His Asn Ala Leu Ile
110      340      345      350
113 Thr Gln Phe Ser Leu Gln Leu Leu His Gln Arg Leu His Phe Ser Ala
114      355      360      365
117 Ala Gly Phe Phe Asn Val Asp Cys Thr Leu Leu Tyr Thr Ile Val Gly
118      370      375      380
121 Ala Thr Thr Thr Tyr Leu Ile Ile Leu Ile Gln Phe His Met Ser Glu
122 385      390      395      400
125 Ser Thr Ile Gly Ser Asp Ser Asn Gly Gln
126      405      410
129 <210> SEQ ID NO: 2
130 <211> LENGTH: 385
131 <212> TYPE: PRT
132 <213> ORGANISM: Drosophila melanogaster
134 <400> SEQUENCE: 2
136 Met Ser Gly His Leu Gly Arg Val Leu Gln Phe His Leu Arg Leu Tyr
137 1      5      10      15
140 Gln Val Leu Gly Phe His Gly Leu Pro Leu Pro Gly Asp Gly Asn Pro
141      20      25      30
144 Ala Arg Thr Arg Arg Arg Leu Met Ala Trp Ser Leu Phe Leu Leu Ile
145      35      40      45
148 Ser Leu Ser Ala Leu Val Leu Ala Cys Leu Phe Ser Gly Glu Glu Phe
149      50      55      60
152 Leu Tyr Arg Gly Asp Met Phe Gly Cys Ala Asn Asp Ala Leu Lys Tyr
153 65      70      75      80
156 Val Phe Ala Glu Leu Gly Val Leu Ala Ile Tyr Leu Glu Thr Leu Ser
157      85      90      95
160 Ser Gln Arg His Leu Ala Asn Phe Trp Trp Leu His Phe Lys Leu Gly
161      100      105      110
164 Gly Gln Lys Thr Gly Leu Val Ser Leu Arg Ser Glu Phe Gln Gln Phe
165      115      120      125
168 Cys Arg Tyr Leu Ile Phe Leu Tyr Ala Met Met Ala Ala Glu Val Ala
169      130      135      140
172 Ile His Leu Gly Leu Trp Gln Phe Gln Ala Leu Thr Gln His Met Leu

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/081,816

DATE: 03/11/2002

TIME: 10:41:10

Input Set : A:\EP.txt

Output Set: N:\CRF3\03112002\J081816.raw

```

173 145          150          155          160
176 Leu Phe Trp Ser Thr Tyr Glu Pro Leu Val Trp Leu Thr Tyr Leu Arg
177          165          170          175
180 Asn Leu Gln Phe Val Leu His Leu Glu Leu Leu Arg Glu Gln Leu Thr
181          180          185          190
184 Gly Leu Glu Arg Glu Met Gly Leu Leu Ala Glu Tyr Ser Arg Phe Ala
185          195          200          205
188 Ser Glu Thr Gly Arg Ser Phe Pro Gly Phe Glu Ser Phe Leu Arg Arg
189          210          215          220
192 Arg Leu Val Gln Lys Gln Arg Ile Tyr Ser His Val Tyr Asp Met Leu
193 225          230          235          240
196 Lys Cys Phe Gln Gly Ala Phe Asn Phe Ser Ile Leu Ala Val Leu Leu
197          245          250          255
200 Thr Ile Asn Ile Arg Ile Ala Val Asp Cys Tyr Phe Met Tyr Tyr Ser
201          260          265          270
204 Ile Tyr Asn Asn Val Ile Asn Asn Asp Tyr Tyr Leu Ile Val Pro Ala
205          275          280          285
208 Leu Leu Glu Ile Pro Ala Phe Ile Tyr Ala Ser Gln Ser Cys Met Val
209          290          295          300
212 Val Val Pro Arg Ile Ala His Gln Leu His Asn Ile Val Thr Asp Ser
213 305          310          315          320
216 Gly Cys Cys Ser Cys Pro Asp Leu Ser Leu Gln Ile Gln Asn Phe Ser
217          325          330          335
220 Leu Gln Leu Leu His Gln Pro Ile Arg Ile Asp Cys Leu Gly Leu Thr
221          340          345          350
224 Ile Leu Asp Cys Ser Leu Leu Thr Arg Met Ala Cys Ser Val Gly Thr
225          355          360          365
228 Tyr Met Ile Tyr Ser Ile Gln Phe Ile Pro Lys Phe Ser Asn Thr Tyr
229          370          375          380
232 Met
233 385
236 <210> SEQ ID NO: 3
237 <211> LENGTH: 381
238 <212> TYPE: PRT
239 <213> ORGANISM: Drosophila melanogaster
241 <400> SEQUENCE: 3
243 Met Gln Arg Thr His Leu Glu Phe Glu Phe Lys Asn Ala Pro Gln Glu
244 1          5          10          15
247 Pro Lys Arg Pro Phe Glu Phe Phe Met Tyr Phe Lys Phe Cys Leu Ile
248          20          25          30
251 Asn Leu Met Met Met Ile Gln Val Cys Gly Ile Phe Ala Gln Tyr Gly
252          35          40          45
255 Glu Val Gly Lys Gly Ser Val Ser Gln Val Arg Val His Phe Ala Ile
256          50          55          60
259 Tyr Ala Phe Val Leu Trp Asn Tyr Thr Glu Asn Met Ala Asp Tyr Cys
260 65          70          75          80
263 Tyr Phe Ile Asn Gly Ser Val Leu Lys Tyr Tyr Arg Gln Phe Asn Leu
264          85          90          95
267 Gln Leu Gly Ser Leu Arg Asp Glu Met Asp Gly Leu Arg Pro Gly Gly

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/081,816

DATE: 03/11/2002

TIME: 10:41:10

Input Set : A:\EP.txt

Output Set: N:\CRF3\03112002\J081816.raw

```

268          100          105          110
271 Met Leu Leu His His Cys Cys Glu Leu Ser Asp Arg Leu Glu Glu Leu
272          115          120          125
275 Arg Arg Arg Cys Arg Glu Ile His Asp Leu Gln Arg Glu Ser Phe Arg
276          130          135          140
279 Met His Gln Phe Gln Leu Ile Gly Leu Met Leu Ser Thr Leu Ile Asn
280 145          150          155          160
283 Asn Leu Thr Asn Phe Tyr Thr Leu Phe His Met Leu Ala Lys Gln Ser
284          165          170          175
287 Leu Glu Glu Val Ser Tyr Pro Val Val Val Gly Ser Val Tyr Ala Thr
288          180          185          190
291 Gly Phe Tyr Ile Asp Thr Tyr Ile Val Ala Leu Ile Asn Glu His Ile
292          195          200          205
295 Lys Leu Glu Leu Glu Ala Val Ala Leu Thr Met Arg Arg Phe Ala Glu
296          210          215          220
299 Pro Arg Glu Met Asp Glu Arg Leu Thr Arg Glu Val Arg Asn Lys Ile
300 225          230          235          240
303 Phe Ser Phe Leu Ala Thr Thr Leu Glu Ile Met Ile Gln Ile Trp Leu
304          245          250          255
307 Ser Phe Phe Ala Asn Phe Asp Asp Val Thr Pro Tyr Arg Lys Cys Glu
308          260          265          270
311 Asn Arg Pro Lys Asn Leu Phe Phe Lys Ile Arg Gln Lys Val Ile Gly
312          275          280          285
315 Ile Val Ser Ser Gly Lys Leu Lys Leu Leu Val Ser Leu Arg Phe Phe
316          290          295          300
319 Ile Ile Asp Asn Arg Leu Ile Leu Asn Leu His Lys Tyr Leu Ala Ile
320 305          310          315          320
323 Lys Leu Asn Phe Leu Asn Leu Ile Gln Ile Glu His Leu Ser Leu Glu
324          325          330          335
327 Leu Leu Asn Tyr Gln Pro Pro Met Leu Cys Gly Leu Leu His Leu Asp
328          340          345          350
331 Arg Arg Leu Val Tyr Leu Ile Ala Val Thr Ala Phe Ser Tyr Phe Ile
332          355          360          365
335 Thr Leu Val Gln Phe Asp Leu Tyr Leu Arg Lys Lys Ser
336          370          375          380
339 <210> SEQ ID NO: 4
340 <211> LENGTH: 373
341 <212> TYPE: PRT
342 <213> ORGANISM: Drosophila melanogaster
344 <400> SEQUENCE: 4
346 Met Arg Val Gly Lys Leu Cys Arg Leu Ala Leu Arg Phe Trp Met Gly
347 1          5          10          15
350 Leu Ile Leu Val Leu Gly Phe Ser Ser His Tyr Tyr Asn Pro Thr Arg
351          20          25          30
354 Arg Arg Leu Val Tyr Ser Arg Ile Leu Gln Thr Tyr Asp Trp Leu Leu
355          35          40          45
358 Met Val Ile Asn Leu Gly Ala Phe Tyr Leu Tyr Tyr Arg Tyr Ala Met
359          50          55          60
362 Thr Tyr Phe Leu Glu Gly Met Phe Arg Arg Gln Gly Phe Val Asn Gln

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/081,816

DATE: 03/11/2002

TIME: 10:41:10

Input Set : A:\EP.txt

Output Set: N:\CRF3\03112002\J081816.raw

```

363 65          70          75          80
366 Val Ser Thr Cys Asn Val Phe Gln Gln Leu Leu Met Ala Val Thr Gly
367          85          90          95
370 Thr Trp Leu His Phe Leu Phe Glu Arg His Val Cys Gln Thr Tyr Asn
371          100          105          110
374 Glu Leu Ser Arg Ile Leu Lys His Asp Leu Lys Leu Lys Glu His Ser
375          115          120          125
378 Arg Phe Tyr Cys Leu Ala Phe Leu Ala Lys Val Tyr Asn Phe Phe His
379          130          135          140
382 Asn Phe Asn Phe Ala Leu Ser Ala Ile Met His Trp Gly Leu Arg Pro
383 145          150          155          160
386 Phe Asn Val Trp Asp Leu Leu Ala Asn Leu Tyr Phe Val Tyr Asn Ser
387          165          170          175
390 Leu Ala Arg Asp Ala Ile Leu Val Ala Tyr Val Leu Leu Leu Asn
391          180          185          190
394 Leu Ser Glu Ala Leu Arg Leu Asn Gly Gln Gln Glu His Asp Thr Tyr
395          195          200          205
398 Ser Asp Leu Met Lys Gln Leu Arg Arg Arg Glu Arg Leu Leu Arg Ile
399          210          215          220
402 Gly Arg Arg Val His Arg Met Phe Ala Trp Leu Val Ala Ile Ala Leu
403 225          230          235          240
406 Ile Tyr Leu Val Phe Phe Asn Thr Ala Thr Ile Tyr Leu Gly Tyr Thr
407          245          250          255
410 Met Phe Ile Gln Lys His Asp Ala Leu Gly Leu Arg Gly Arg Gly Leu
411          260          265          270
414 Lys Met Leu Leu Thr Val Val Ser Phe Leu Val Ile Leu Trp Asp Val
415          275          280          285
418 Val Leu Leu Gln Val Ile Cys Glu Lys Leu Leu Ala Glu Glu Asn Lys
419          290          295          300
422 Ile Cys Asp Cys Pro Glu Asp Val Ala Ser Ser Arg Thr Thr Tyr Arg
423 305          310          315          320
426 Gln Trp Glu Met Ser Ala Leu Arg Arg Ala Ile Thr Arg Ser Ser Pro
427          325          330          335
430 Glu Asn Asn Val Leu Gly Met Phe Arg Met Asp Met Arg Cys Ala Phe
431          340          345          350
434 Ala Leu Ile Ser Cys Ser Leu Ser Tyr Gly Ile Ile Ile Ile Gln Ile
435          355          360          365
438 Gly Tyr Ile Pro Gly
439          370
442 <210> SEQ ID NO: 5
443 <211> LENGTH: 431
444 <212> TYPE: PRT
445 <213> ORGANISM: Drosophila melanogaster
447 <400> SEQUENCE: 5
449 Met Ala Phe Lys Leu Trp Glu Arg Phe Ser Gln Ala Asp Asn Val Phe
450 1          5          10          15
453 Gln Ala Leu Arg Pro Leu Thr Phe Ile Ser Leu Leu Gly Leu Ala Pro
454          20          25          30
457 Phe Arg Leu Asn Leu Asn Pro Arg Lys Glu Val Gln Thr Ser Lys Phe

```

Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/081,816

DATE: 03/11/2002

TIME: 10:41:11

Input Set : A:\EP.txt

Output Set: N:\CRF3\03112002\J081816.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:6177 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60

L:6181 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60